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CORRESPONDENCE

Langerhans cells in the lining epithelium of unicystic ameloblastoma

Unicystic ameloblastoma is a specific type of ameloblastoma that probably arises from a dentigerous cyst. Unicystic ameloblastomas occur most frequently in younger patients and >90% of them are found in the mandible, especially in the posterior regions. Langerhans cells (LCs) are antigen-presenting cells that are important for T-cell-mediated immune reactions. LCs can be demonstrated by anti-S-100 or anti-CD1a immunostaining in the lining epithelia of radicular, dentigerous, odontogenic, and skin epidermoid cysts.[1,2] This study investigated whether LCs were also present in the ameloblastomatous lining epithelia and tissues of a unicystic ameloblastoma.

An 18-year-old male patient noticed a swelling in his right posterior mandible. He came to our dental department for evaluation and treatment of the swelling. Panoramic radiography was taken and showed a circumscribed radiolucency surrounding the crown of an unerupted right mandibular second molar. The right mandibular third molar was pushed toward the ascending ramus (Fig. 1A). A biopsy was performed from the cystic lesion. The pathological report was a dentigerous cyst. It was arranged to excise the cyst under general anesthesia. Enucleation of the cyst was performed. Histopathological examination of the excised specimen showed a cystic lesion lined mainly of ameloblastomatous epithelium that had a basal layer of columnar or cuboidal cells with reverse nuclear polarity and basilar cytoplasmic vacuolization, as well as loosely cohesive suprabasal cells resembling stellate reticulum. Tumor tissues of plexiform ameloblastoma and nests of follicular ameloblastoma were found in the fibrous cystic wall (Fig. 1B). Therefore, a mural unicystic ameloblastoma was diagnosed. In small parts of the lesion, the cyst was lined by stratified squamous epithelium looking like the lining epithelium of a dentigerous cyst. Anti-CD1a immunostaining revealed a few LCs in the dentigerous cyst-like stratified squamous lining epithelia (Fig. 1C and D). However, no LCs were demonstrated in the typical ameloblastomatous lining epithelium and mural follicular and plexiform ameloblastomas (Fig. 1E and F).

Immunohistochemistry is a valuable method that can be used to identify different cell types in oral or skin lesions.[1–4] Our previous studies showed more LCs in the lining epithelium of a radicular cyst than in that of a dentigerous cyst or an odontogenic keratocyst, and more LCs in the lining epithelium of a ruptured inflamed epidermoid cyst than in that of an intact epidermoid cyst.[1,2] These findings suggest that the presence of LCs in the lining epithelia of odontogenic cysts and skin epidermoid cysts is intimately associated with chronic inflammation in adjacent subepithelial connective tissues. Mello et al.[5] found more LCs in calcifying odontogenic cysts than in ameloblastomas and odontogenic keratocysts. They suggested that depletion of LCs might influence the local invasiveness of ameloblastomas and odontogenic keratocysts. The depletion of LCs in the typical ameloblastomatous lining epithelia and tissues in a unicystic ameloblastoma was also found in this study. However, further studies are needed to confirm whether the depletion

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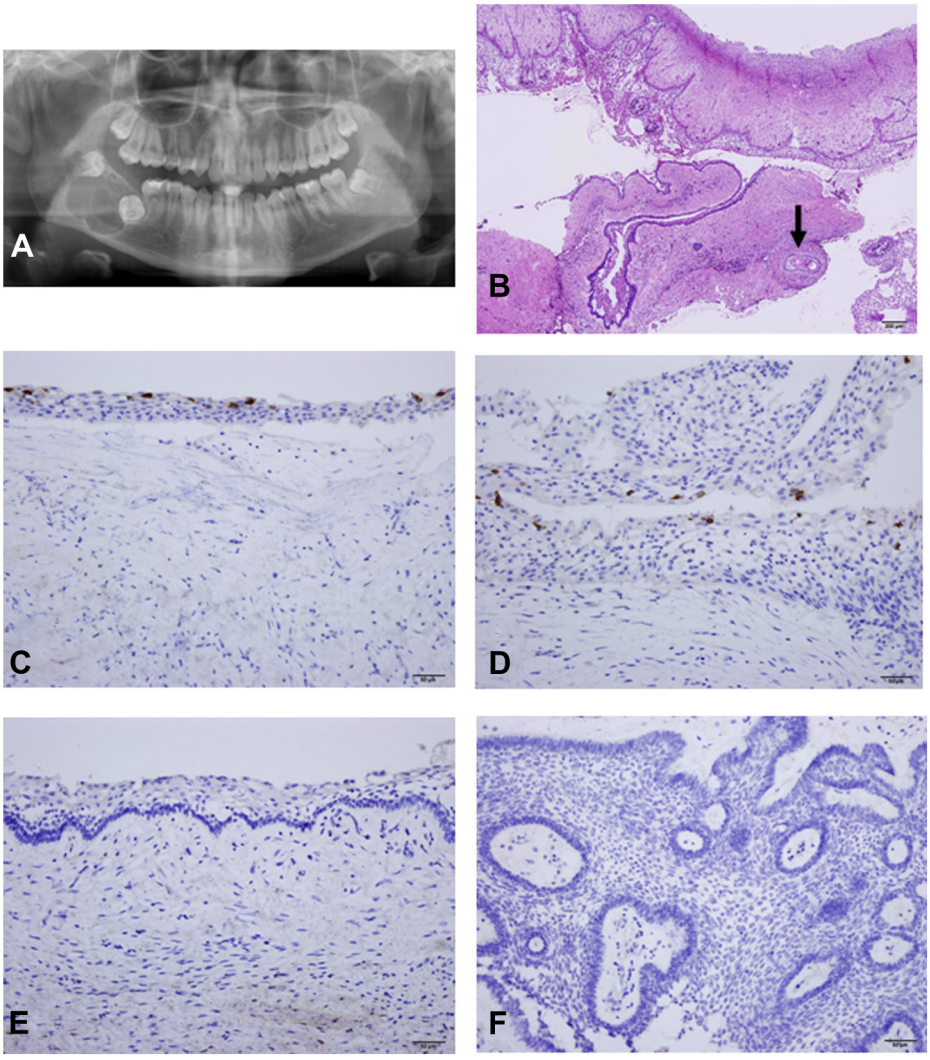

Figure 1 Radiographic features and H&E-stained and immunostained histological microphotographs of a unicystic ameloblastoma. (A) Panoramic radiograph showing circumscribed radiolucency surrounding the crown of an unerupted right mandibular second molar. The right mandibular third molar was pushed toward the ascending ramus. (B) An H&E-stained tissue section of the excised specimen, demonstrating a cystic lesion lined mainly with ameloblastomatous epithelium that had a basal layer of columnar or cuboidal cells with reverse nuclear polarity and basilar cytoplasmic vacuolization, as well as loosely cohesive suprabasal cells resembling stellate reticulum. Nests of follicular ameloblastoma are found in the fibrous cystic wall (arrow). (C) Anti-CD1a-immunostained tissue section exhibiting several brown-colored Langerhans cells in the thin stratified squamous lining epithelia of the unicystic ameloblastoma. (D) Anti-CD1a-immunostained tissue section showing a few brown-colored Langerhans cells in the thick stratified squamous lining epithelia of the unicystic ameloblastoma. (E and F) Anti-CD1a-immunostained tissue sections showing no Langerhans cells in the typical ameloblastomatous lining epithelium (E) and mural plexiform ameloblastoma (F). (Original magnification, B, 10×; C–F, 50×). H&E = hematoxylin and eosin.

of LCs in ameloblastomatous tissues is associated with the local invasiveness of ameloblastomas.

Conflicts of interest

All authors declare no conflicts of interest.

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